



# FOREIGN BROADCAST INFORMATION SERVICE

19981013 140

# JPRS Report—

# Epidemiology

REPRODUCED BY  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL TECHNICAL INFORMATION SERVICE  
SPRINGFIELD, VA. 22161

DTIC QUALITY INSPECTED 3

DTIC 62-100000 3

# Epidemiology

JPRS-TEP-88-021

## CONTENTS

4 NOVEMBER 1988

### SUB-SAHARAN AFRICA

#### ZAMBIA

Prime Minister Urges Child Immunization Drive	<i>[ZAMBIA DAILY MAIL 17 Sep]</i>	1
Malaria Toll at 135 for First Half of 1988	<i>[TIMES OF ZAMBIA 17 Sep]</i>	1
Medical Director on Epidemic	<i>[TIMES OF ZAMBIA 19 Sep]</i>	2
Editorial Comment	<i>[TIMES OF ZAMBIA 15 Sep]</i>	2

### CHINA

Alarm Increases Over Sharp Rise in VD Cases	<i>[CHINA DAILY 5 Sep]</i>	3
Prevention, Control of Infectious Diseases Emphasized		
<i>[ZHONGHUA LIUXINGBINGXUE ZAZHI Jun]</i>		3

### EAST ASIA

#### HONG KONG

Five Months Without New AIDS Case; Testing Continues		
<i>[SOUTH CHINA MORNING POST 28 Sep]</i>		9

### PHILIPPINES

Army in Mountains Suffering Casualties From Malaria	<i>[THE MANILA CHRONICLE 27 Sep]</i>	10
---	--------------------------------------	----

### NEAR EAST & SOUTH ASIA

#### INDIA

Minister of State Gives Statistics on AIDS	<i>[THE TIMES OF INDIA 1 Sep]</i>	11
Vaccine Developed for Dreaded Cattle Disease	<i>[PATRIOT 26 Aug]</i>	11

### WEST EUROPE

#### FEDERAL REPUBLIC OF GERMANY

Forum Discusses 'AIDS at the Workplace'	<i>[FRANKFURTER ALLGEMEINE 12 Sep]</i>	12
Avarol Seen As Possible Future Cure for AIDS		13
Substance Impedes Propagation in Cells	<i>[FRANKFURTER ALLGEMEINE 17 Sep]</i>	13
Tests Expected in a Year	<i>[HANDELSBLATT 19 Sep]</i>	14

#### FRANCE

Survey Finds Unrestricted Syringe Purchases Effective Against AIDS	<i>[LIBERATION 27 Sep 88]</i>	15
--	-------------------------------	----

#### IRELAND

AIDS Rise Continues, Information Effort Scored	<i>[IRISH INDEPENDENT 29 Aug]</i>	15
Significant Rise in Measles Cases Reported	<i>[IRISH INDEPENDENT 9 Sep]</i>	16

#### NORWAY

Armed Forces Reject Compulsory AIDS Testing for Recruits	<i>[AFTENPOSTEN 28 Sep]</i>	16
--	-----------------------------	----

## ZAMBIA

### Prime Minister Urges Child Immunization Drive 54000003a Lusaka ZAMBIA DAILY MAIL in English 17 Sep 88 p 5

[Text] Prime Minister Kebby Musokotwane has called on women to actively participate in the child immunisation programme in order to reduce child mortality rate.

Launching the child immunisation week at Kalingalinga clinic yesterday, Cde Musokotwane said if it was possible to eliminate killer diseases like smallpox it was the same with immunisable diseases if mothers were sensitised and mobilised.

Cde Musokotwane revealed that a 1986 survey of immunisable diseases showed that about 1,344 babies born in that year died of neutral tetanus within the first 28 days of their lives.

"It is on record that tuberculosis, measles, diphtheria, whooping cough, tetanus and poliomyelitis, account for a significant proportion of childhood diseases yet technology to prevent these unnecessary disease and deaths exist," he said.

Earlier UNICEF representative to Zambia Mr Fida Hussein Shah said his organisation was concerned with the high mortality rate among the children.

Mr Shah said that over 440,000 children in Zambia were undernourished resulting in the high level of child morbidity and mortality rate.

The launching ceremony was witnessed by Lusaka province member of the Central Committee Cde. Bautis Kapulu, Cde Rodger Sakuhuka, who is Minister of Health and Director of medical services Cde Evariste Njelesani.

### Malaria Toll at 135 for First Half of 1988 54000003b Lusaka TIMES OF ZAMBIA in English 17 Sep 88 p 1

[Text] At least 135 children died between January and June this year in Livingstone alone from an unprecedented outbreak of malaria in the Southern Province.

The Tropical Diseases Research Centre (TDRC) team which two months ago probed cases of the disease in the province says in its report 400,528 patients were treated during the period.

Of this number which included adults, infant mortality each month for Livingstone hospitals was 17 (January), 17 (February), 16 (March), 22 (April), 30 (May) and 23 (June).

A random check for the possible carriers of the malaria germ on schoolchildren who were the target group, of the 337 tested in Livingstone 78.5 per cent produced positive results.

Another 69.4 per cent were positive in Kalomo where similar tests were carried out by the team of experts expected to conduct a review in January next year.

Most people were found highly resistant to most of the drugs prescribed for the disease apart from quinine and quinidine.

Provincial medical officer Dr Elisha Chipandwe who acknowledged the report but would not divulge its contents said yesterday a programme had been drawn up to control the epidemic.

And Prime Minister Cde Kebby Musokotwane yesterday outlined the Government's four-point plan aimed at vaccinating 80 per cent of Zambian children under 15 months.

The plan places priority on the six major child killer diseases, mass mobilisation campaigns, daily vaccinations at health centres throughout the country and the concentration on children living in townships.

Cde Musokotwane unveiled the programme at Lusaka's Kalingalinga clinic when he launched the nation's first national immunisation week.

He said there would be no excuse for failure because the Government had provided conditions for the success of the programme.

"The excellent Party structure should be put to full use to end the scourge of tuberculosis, measles, diphtheria, whooping cough, tetanus and polio."

These diseases account for many deaths among children and to reduce the mortality rate the Government has planned to:

—Embark on mass mobilisation campaigns like those started by the Women's League but these must be extended to the district level;

—Daily vaccinations of children and pregnant mothers at all health institutions in Zambia;

—Placing priority on measles, polio and neonatal tetanus;

—Intensified vaccination of children in townships as these are at greater risk than those in rural areas.

UNICEF's acting area representative Mr Fida Hussein said more than 48,000 children die in Zambia from preventable diseases.

District governor for Rotary International Mr Brig. Behal said the charitable organisation had raised more than \$120 million over the past two years for the children's immunisation campaign.

**Medical Director on Epidemic**  
54000003c Lusaka *TIMES OF ZAMBIA* in English  
19 Sep 88 p 1

[Text] The prevalence of malaria in Zambia has reached epidemic proportions that urgent measures should be taken to avert a national tragedy, director of medical service Dr Everiste Njelesani has said.

In some parts of Zambia the prevalence of the disease in blood samples taken was 74 per cent while in the Southern Province it was estimated that more than 70 per cent of the population might be infected.

Cde Njelesani said this on Sunday Interview programme on Television Zambia last night.

He said the incidence of the disease was so serious that the Government had called for an urgent meeting for health and council workers in Zambia to draft a national policy for the control of the disease.

"We have a problem which is serious. It's only a concerted approach that will get the problem under control."

He suggested that councils should start a massive anti-malaria spraying campaign.

The two-pronged attack was the only hope for arresting the spread of the disease especially that it had developed certain strains which could not be cured through normal treatment.

"Malaria has always been a major problem in Zambia. When we identified the problems of AIDS we said so. Given all those cases of AIDS, malaria is still the number one problem."

Cde Njelesani said figures circulated abroad about the prevalence of AIDS in Zambia should be ignored because they were alarmist.

**Editorial Comment**  
54000003d Lusaka *TIMES OF ZAMBIA* in English  
15 Sep 88 p 1

[Text] The incidence of malaria in this country is high and in some cases even alarming. Every year malaria claims many lives and in recent years there would appear to be an acceleration of this trend.

Not too long ago, Southern Province medical officer Dr Elisha Chipandwe revealed that 93,000 cases had been reported in that region alone in three months.

Thereafter, a team of "medics" from the Tropical Diseases Research Centre (TDRC) in Ndola travelled to the province to probe what seemed like an unusual outbreak. Since then nothing official has been heard. Only rumours proliferate.

Now, it is the silence in these kinds of issues which we find most disturbing, uninspiring, unacceptable.

Silence certainly cannot stem the disease nor for that matter would speaking out still. Clarifying the situation would help create an informed awareness while silence merely transforms the disease into a silent killer—but a killer all the same.

It seems imperative therefore that there should be a more open discussion of the extent of this problem, what is being done and what can be done.

At present, it is no exaggeration to say that there many people are quite frightened. These are the people who have watched their relatives die of the disease and they cannot be reassured by the persistent rumours, unchallenged, that the disease is now a nationwide epidemic and there is no medicine.

Rumour is very powerful and dangerous, more so in a matter like this. Ideally it should be quashed the moment it surfaces. If it is left to do the rounds unchallenged, it becomes the truth and it appears that we are now getting close to this situation.

It is high time therefore that the medical authorities briefed the country on malaria. Are the Southern Province figures indicative of the situation nationwide, and more important are the hospitals able to deal with the problem? Certain a forthright statement from the health authorities would do a lot to reassure the people.

It is also time that the medical authorities re-emphasised preventive measures. There is now an apparent loss of zeal for fighting malaria through this kind of action. Councils no longer spray homes and those that do normally do so erratically. This is worrying because it suggests that in the long term the problem could worsen.

In the short term however what is required is to quash the gossip and until that happens rumour will reign supreme.

**Alarm Increases Over Sharp Rise in VD Cases**  
54004816 Beijing CHINA DAILY in English  
5 Sep 88 p 1

[Text] (XINHUA)—Chinese medical experts are calling for a national body to prevent and treat venereal disease, the incidence of which has increased dramatically in China in recent years, the HEALTH NEWS JOURNAL said yesterday.

The work should involve the public security, judiciary, civil affairs, women's federation, tourism and public health departments, the paper said.

Laws and regulations should be tightened to ban prostitution and patients with venereal diseases should be forced to get medical treatment. Nationwide monitoring should be instituted and more medical personnel trained to deal with the disease.

Venereal disease was all but wiped out in China in the 2 decades following liberation in 1949, but it has been steadily increasing since the late 1970s when China began to open up to the outside world.

The disease has spread from a few coastal cities to almost every city in the country, the paper said, noting that the number of VD patients in Guangzhou last year was 4 times the figure for the previous. Most sufferers are under the age of 20.

The paper said the main reasons for the spread of the disease were the closing down of prevention and treatment clinics in the early 1960s, lukewarm measures on prostitution, a lack of education about the harm the disease can do and backward medical equipment and treatment.

**Prevention, Control of Infectious Diseases  
Emphasized**

54004812 Beijing ZHONGHUA LIUXINGBINGXUE  
ZAZHI [CHINESE JOURNAL OF EPIDEMIOLOGY]  
in Chinese Vol 9 No 3 Jun 88 pp 160-163

[Article by Zeng Guang [2582 0342] and Tong Zhifu [0157 0037 1788], Epidemic Diseases Research Institute, Chinese Academy of Preventive Medical Science, and Liu Kangmai [0491 1600 6701], Chinese Academy of Preventive Medical Science. Overseen by Tang Shuangzhen [3282 7175 2182], Chinese Academy of Preventive Medical Science]

[Text] Guided by a policy of "prevention as the key link" in health work since the founding of the People's Republic, splendid achievements have been scored in the prevention and control of infectious diseases in China. Since the 1970's, in particular, a trend toward steady decline has occurred in both the total incidence of diseases that must be reported by law and the total death rate. The position of acute infectious diseases and of pulmonary tuberculosis as causes of death has declined

steadily. Statistics from some Chinese cities on specific death rates and causes of death attributable to the top 10 illnesses<sup>1</sup> shows that in 1957 acute infectious diseases and pulmonary tuberculosis as having been second only to respiratory illnesses, occupying second and third place respectively. By 1975, both acute infectious diseases and pulmonary tuberculosis had fallen to eighth and sixth places respectively. By 1986, infectious diseases as a cause of death (pulmonary tuberculosis aside) had retreated to tenth place, and pulmonary tuberculosis had retreated to seventh place. By contrast, the position of coronary disease, cerebrovascular disease, and malignant oncomas as causes of death had gradually moved upward to occupy the three top places by 1986.<sup>2</sup> Some specialists use this as an argument for maintaining that the emphasis of future sanitary and sickness prevention work in China should be shifted to noninfectious diseases. In addition, the scope of current research on epidemic diseases has been expanded from infectious diseases to include noninfectious diseases. Both inside and outside China, epidemic diseases now means both infectious and noninfectious diseases, and epidemiological methods are now being used to reveal the pathogenesis of numerous chronic diseases in the opening of new avenues to prevention and control of chronic illnesses. Some people may quite naturally link this leap to whether the focus of the country's sanitary and sickness prevention work should be shifted, providing a basis for arguing for a "shift" in methodology.

The advent of the foregoing situation is bound to have a bearing on discussions about where the future emphasis of sanitary and sickness prevention should be placed in China, and it will receive widespread attention from people concerned with preventive medicine. Nevertheless, as yet no full discussion has been conducted on this issue that has a bearing on the overall situation; consequently, we feel our views should be expressed for all to discuss.

We believe that at the present stage the focus of sanitary and sickness prevention work in China should not be shifted to noninfectious diseases. Though it is true that as China's health endeavors develop, serious attention must be given to coronary disease, cerebrovascular disease and malignant oncomas, which hold the top three places as causes of civilian deaths; nevertheless, the ranking of causes of death is only a fairly limited indicator that cannot reflect the major effect of infectious and noninfectious diseases on overall social, political, and economic life, and the life of the people. Therefore, it cannot be used as the main basis for formulating future disease prevention policies. Furthermore, advances in methodology only provide favorable conditions for carrying out work, so they can serve much less as the point of departure for policy decisions. Now let us explain our ideas in several regards below.

### 1. Changes in the Ranking of Causes of Death in China Result From the Attention Given to the Prevention of Infectious Diseases

In today's world, if infectious diseases, rather than noninfectious diseases, are the main reason for the death of a country's inhabitants, that shows that the country's preventive medicine work remains in an undeveloped state. The rapid change in the ranking of infectious and noninfectious diseases as causes of death in China objectively demonstrates that China has quickly shed its most undeveloped state in the field of preventive medicine to approach the pattern found in developed countries. Nevertheless, one positively cannot simplistically take this as a basis for saying that the emphasis in disease prevention work should be shifted to noninfectious diseases. This is because this extrapolation ignores a most basic fact, namely, that changes in the rankings for causes of death in China are precisely the result of the serious attention that has been accorded infectious diseases. To advocate reliance on rankings for causes of death as a basis for deciding the emphasis of prevention and control work in the field of preventive medicine in China is to imitate the methods of some developed countries. We must realize that changes in rankings of the causes of death in developed countries are backed by developed economies, science and technology, and cultural education; consequently the decline of the incidence of and the death rate from infectious diseases in these countries has also always been relatively steady. While economic, scientific and technical, and cultural education factors also play a role in shifts in rankings for the causes of death in China, mostly these shifts are a function of correct health policies and a relatively consummate epidemic prevention system. One might say that the decline in the ranking of infectious diseases in China has been founded on state administrative intervention. Therefore, the incidence of infectious diseases in China is in an unstable situation of being in decline when firm measures are taken, and rising when there is a relaxation of efforts. To place on a par the drop in rankings for causes of death that arise from two different bases, or even to attribute the drop in the rankings of infectious diseases in China to the same reasons as in developed countries, and then go on to conclude that the emphasis in future sanitary and sickness prevention work in China should be the same as in developed countries will simply not hold water. On the contrary, this just happens to show that the prevention of infectious diseases in China should only be strengthened rather than weakened.

Since the founding of the People's Republic, the country has expended large amounts of manpower and material resources on the establishment of an infectious diseases epidemic prevention network extending from the central government at the top to streets and rural villages at the bottom. This network remains the disease prevention system that covers the widest area in the field of preventive medicine in China. It is because of the emphasis on the prevention of infectious diseases, which enables the

epidemic prevention network to play a tremendous role, that there has been a drop in infectious diseases and a relative rise in noninfectious diseases as the cause of death in China today.

Unless the focus is on the prevention and control of infectious diseases, it will not be possible to estimate accurately what the disease quotient (incidence and deaths) is. However, a large number of facts shows that even though such manpower and material has been expended for the control of infectious diseases, what is to be done should some mistakes or gaps appear in the work?

In 1967, when the "gang of four" was on the rampage, a nationwide epidemic of epidemic encephalitis broke out because the large-scale movement of people was ignored as a factor leading to the spread of epidemic encephalitis. Another factor was the generally known destruction of the epidemic prevention system's work. Incomplete statistics show that the incidence of epidemic encephalitis in the whole country for that year reached 403.94 per 100,000, and the death rate reached 22.16 per 100,000. The number of dead (mostly youths and children) reached more than 160,000.<sup>3</sup> This was several times again the total number of deaths from AIDS in the entire world in 1980.

In some parts of the Guangxi-Zhuang Autonomous Region in 1986, immunizations could not be completed because of shortcomings in the epidemic prevention network at the grassroots level. This led to a large accumulation of people susceptible to disease, including an incidence rate for poliomyelitis in four counties that reached between 22.21 and 35.78 per 100,000, and a death rate that reached between 4.56 and 7.64 per 100,000.<sup>4</sup> The incidence rate and the death rate were respectively between 125 and 202 times, and between 239 and 401 times as high as the national averages for the same year.

In September 1987, outbreaks of leptospirosis in some parts of Sichuan Province reached epidemic proportions, more than 90,000 cases occurring and 255 deaths resulting.<sup>5</sup> The incidence of the disease for a single month was more than double the total national incidence during the previous year. As a result, peasants in epidemic areas dared not go into paddy fields, and people stayed away from bodies of water. This had a severe effect on production and daily life.

Similar events are too numerous to mention. This shows that though we have scored very great accomplishments in the control of infectious diseases, in an overall sense the control of infectious diseases is still in precarious balance, and the incidence of some major infectious diseases such as hepatitis, hemorrhagic fever, and rabies is far higher than the lowest levels reached since liberation.<sup>3</sup> Given this situation, there should positively be no shift of emphasis in the direction of noninfectious diseases. That we see no change in the ranking of causes

of death is attributable to the serious attention that has been devoted to the prevention and control of infectious diseases, and to regard this change as the result of a natural evolution of events, and use it as a basis for a change in emphasis will inevitably mean the commission of metaphysical mistakes.

## 2. Limitations of Causes of Death and Rankings of Causes of Death in Conveying the Degree of Threat From Diseases

Determination of cause of death is the making of a qualitative summation of the reasons that bring a person's life to an end. Since it is influenced by various reasons that cannot be capsulized, such as the expression of multiple causes of death, a categorization of the cause of death, and other reasons, just a single cause is selected to make a final conclusion. The 20th World Health Conference ruled that even though there are reasons for selecting a "fundamental cause of death" in deciding the cause of death,<sup>6</sup> this can reflect only the pathogeny at a certain stage before death. For example, if a person suffers simultaneously from arteriosclerotic coronary disease and flu, only the former serves as the cause of death. Or should viral hepatitis turn into liver carcinoma, should multiple parasitic diseases develop into cirrhosis, should repeated respiratory tract infections ultimately lead to pulmonary heart disease, or should EB virus infection turn into nose and throat cancer, only the latter one may be selected as the "fundamental cause of death." Only deaths that are completely attributable to infectious disease such as deaths from rabies, epidemic encephalitis, or acute viral hepatitis may be attributed to infectious disease. Therefore, determination of the cause of death and ranking of causes of death on this basis conceal, to a certain extent, the damage done by infectious diseases, while simultaneously inadvertently inflating the role of noninfectious diseases.

Evaluation of the extent to which a category of diseases harms groups of people cannot be done solely on the basis of death statistics; serious attention should be given to statistics on the incidence of diseases. It is generally recognized that the number of deaths from various reasons among a group of people has next to nothing to do with the numbers of people who had the disease. The incidence of a disease is just the main cause for losses of the labor force and the occurrence of deaths. Regrettably, there is no data yet available on the incidence of infectious and noninfectious diseases for the country as a whole or for provinces. During the early 1970's, a survey was conducted on the incidence of various diseases among 520,000 people in certain counties on the Shandong Promontory.<sup>7</sup> On the basis of the results of this survey, we have listed the percentage of people afflicted with various diseases: infectious diseases (including parasitic diseases), 27.4 percent; digestive system illnesses, 25.7 percent; respiratory system illnesses, 13.5 percent; motor system dysfunction, 11.2 percent; female reproductive system dysfunction, 5.0 percent; nervous system disorders, 4.8 percent; mental disorders, 3.8 percent;

circulatory system disorders, 3.5 percent; skin ailments, 1.7 percent; oncomas, 0.2 percent; and other illnesses, 3.2 percent. Clearly, the pathogeny of infectious diseases held a position of pivotal importance in those counties at that time. Inasmuch as the economic and cultural level of those counties was a little higher than for the country as a whole, it may be surmised that the pathogeny of infectious diseases in most places is higher than in those provinces; hence, sole reliance on 1970's rankings of causes of death in China does not reflect the extent of harm done by infectious diseases at that time.

## 3. Statistics on the Incidence of and Deaths From Infectious and Noninfectious Diseases Conceal Uncomparable Factors

The current incidence of and death figures for infectious diseases in China are figures produced through monitoring and control by a strong epidemic prevention network. For diseases against which immunization measures have been taken for prevention, in particular (such as measles, diphtheria, whooping cough, and poliomyelitis), and diseases controlled by especially effective drugs (such as malaria and filariasis) the incidence and death figures represent "fish that have slipped through the net." The figures for the incidence of and death rates from noninfectious diseases, however, are figures from a group in which there have been no intervention measures. Consequently, the two contain elements that cannot be compared. To use a ranking of causes of death to show the threat that the two types of diseases pose to the life and health of the people is unreasonable.

## 4. Infectious Diseases and Noninfectious Diseases Differ in Their Public Health Significance

Both infectious diseases and noninfectious diseases damage human health. This is a point of agreement. But the specific characteristics of each account for an extremely great difference in the public health significance of each, and this happens to be the point of departure for policy decisions about which side should be given emphasis in the country's sanitary and sickness prevention work.

a. Infectious diseases are infectious; noninfectious diseases are not infectious. A person having an infectious disease, or one carrying a germ (parasite or virus), can pose a threat to several people, a few score people or millions of people around him or her, but a person having a noninfectious disease cannot. Several cases of rabies in a county will arouse concern on the part of people throughout the county, because everyone is threatened. As another example, fewer than 10,000 people per year have died from AIDS in the United States, far lower than the number who have died from oncomas, cardiovascular disease, or cerebrovascular disease. However, AIDS is acknowledged to be the number one public health problem in the country, because the whole society is apprehensive about it. Therefore, in figuring the

danger to society of infectious and noninfectious diseases, it is necessary to look at not only incidence and death rate statistics, but more importantly to look at the latent danger they pose to the overall social structure.

b. The dynamics of the spread of infectious and noninfectious diseases differs. When an infectious disease spreads among nonimmunized groups of people, it generates cases in every generation through a branching process, the incidence increasing geometrically or even exponentially, and spreading rapidly. Take, for example, the world flu epidemic of 1918-1919, which spread to every country in the world within a very short period of time, afflicted 700 million people, and caused 20 million deaths,<sup>8</sup> becoming the greatest human disaster of the present century. This theoretical epidemiological concept has been validated not only through study of mathematical models for the transmission of respiratory tract illnesses, but is also consistent with changes in the prevalence of several nonrespiratory tract diseases. Since 1981, the number of people in the United States who have been stricken with AIDS exhibits a classic exponential trend of increase.<sup>9</sup> By contrast, the incidence of noninfectious diseases shows a slow arithmetical increase. The difference in speed of increase between the two is remarkable.

c. The principal groups threatened by infectious and noninfectious diseases differ. The main groups threatened by infectious diseases are young people and children. Analysis of a "Compilation of Basic Health Data From 58 Illness Monitoring Sites Nationwide"<sup>12</sup> shows that 51 percent of epidemic encephalitis, 76 percent of whooping cough, 83 percent of scarlet fever, 66 percent of measles, and 58 percent of Type B encephalitis cases were concentrated among the 10 years old and below age group, and that 60 percent of the hepatitis, 56 percent of the malaria, 46 percent of the hemorrhagic fever, and 62 percent of the leptospirosis cases occurred in the age group below 30 years of age. The same compilation of data showed that though infectious diseases rank seventh as the cause of death in all age groups, in terms of ranking as the cause of death in the separate age groups of 1 through 4, 5 through 14, and 15 through 34, infectious diseases as a cause of death ranked third, second, and fourth ahead of oncomas, cardiovascular disease, and cerebrovascular disease, showing infectious disease still to be the main cause of death among young people. Statistics from the Disease Monitoring Site in the Dongcheng District of Beijing showed the incidence of high blood pressure among the younger than 44-year-old age group to be 0.44 to 9.58 percent, while it was between 19.28 and 49.50 percent in the older than 45 age group, showing a higher incidence of that disease in the older age group.<sup>10</sup> Data from the same monitoring site showed 80.3 percent of deaths from cerebrovascular disease as having occurred in the 60 to 84-year-old age group; 62.2 percent of deaths from cardiovascular disease occurred in the 50 to 79-year-old age group, and 69.9 percent of deaths from oncomas occurred in the 45 through 74-year-old age group,<sup>9</sup> showing that noninfectious diseases threaten primarily the higher age groups.

Since it is youths who decide a society's future, and since more of them are threatened by infectious diseases, in terms of safeguarding social productivity, the prevention of infectious diseases holds more important significance.

d. Differences in economic benefits from the control of infectious and noninfectious disease epidemics. Specific preventive actions taken for a short period of time can frequently accrue economic benefits rapidly for little investment. An example is the results of monitoring and forecasting of an epidemic of epidemic encephalitis in Shangqiu Prefecture, Henan Province. In 1985 a general inoculation with epidemic encephalitis group A polysaccharide vaccine of all children in the prefecture between the ages of 6 months and 15 years was decreed and carried out, all children under 3 years old being reinoculated 2 years later as a comprehensive prevention measure. During a 2-year period, a total of 2,188,000 people were inoculated at a cost of 326,500 yuan. Within the 2-year period, the number of deaths were reduced by 557, and the incidence of the illness reduced by 17,508 cases. The incidence in 1985 was 93.92 percent lower than in 1984, and in 1986, it was 73.85 percent lower than in 1985, cutting back the peak years for epidemic encephalitis of the 1980's, the benefits-cost difference between 3,519,500 yuan.<sup>11</sup>

Certainly, if appropriate actions are taken, remarkable results may also be obtained in the control of damage done by noninfectious diseases. For example, in 1987 both the Beijing Municipal CPC Committee and the Beijing Municipal Government made a reduction in traffic accidents a major issue for action. In the course of the year, they mobilized 33,455 units, and 184,578 people did street duty. A total of 24,218 assigned (or concurrently serving) traffic safety personnel and traffic activists, township and town traffic personnel, and farm machinery personnel from all units, and 26,376 urban district and county drivers, as well as more than 5,100 traffic policemen worked together as model leaders in the campaign. More than 5,900 traffic signs, more than 4,300 kilometers of traffic lines, and more than 5,300 traffic dividers were replaced or put in place throughout the city, and other actions were also taken. Thanks to these efforts, deaths throughout the city were reduced by 128 during 1987 in a 17.6 percent drop in the death rate, and damage from traffic accidents was reduced by more than 6 million yuan.<sup>12</sup> However, though this was gained through the joint efforts of several tens of thousands of people who stood duty in the streets and the people of the entire city, its economic benefits pale in comparison with those gained from control of infectious diseases.

To summarize the foregoing, disparities in the public health significance of infectious diseases and noninfectious diseases make the potential threat to the social structure of infectious diseases greater than that of noninfectious diseases. Therefore, all countries of the world place the prevention of infectious diseases in first place in sanitation and disease prevention. In economic terms, depending on how countries appropriate funds

and what they can afford, they follow the principle of collecting, reducing, or exempting payment for infectious disease preventive inoculations and treatment. In legal terms, frequently changes in individual living habits (such as food and beverage control, not smoking, and increased physical conditioning) are used in prevention. In some developed countries (such as the United States), the principal method is for individuals to spend their own money to protect their health, and conscious changes in personal living habits to prevent noninfectious diseases; however national public health units serve only a technical advisory and monitoring function. Rarely are compulsory laws used that require people to change their living habits.

### 5. The Burden Is Heavy and the Road Is Long in the Work of Preventing Infectious Diseases in China

Though China has scored world-arresting achievements in the task of preventing infectious diseases, particularly in the planned immunization control of the incidence of infectious diseases, which have now declined to nearly that of developed countries, there are still very many reasons why we should not become blindly optimistic. As before, the burden is heavy and the road is long in the prevention of infectious diseases in China.

a. The incidence of numerous infectious diseases that must be reported by law has still not dropped to the lowest level ever. For example, the incidence of reportable diseases such as epidemic encephalitis, scarlet fever, typhoid fever, encephalitis B, and anthrax during the first 7 years of the 1980's still hovers around the level of the 1950's, and the incidence of major reportable diseases such as dysentery, hepatitis, hemorrhagic fever and rabies is even higher than during the 1950's.<sup>3</sup> We estimate that even taking account of differences in monitoring levels, there has been a substantial increase. It should be noted that there is still a fairly serious failure to report reportable infectious diseases, and that reports received from most areas amount to only between approximately one-fourth and one-half of the actual incidence.<sup>3</sup>

Numerous infectious diseases for which reporting is not required by law, such as urticaria, dengue fever, hepatic distomiasis, and ankylostomiasis threaten the health of millions of people. China presently has no national monitoring system and no effective measures to counter this situation.

b. In most rural areas, mountain regions, and border regions of the country, infectious disease prevention work still leaves much to be desired. In many prefectures and counties, health and epidemic prevention station personnel quality is poor, funds are short, techniques are backward, and some are even unable to complete their planned immunization tasks to say nothing of preventing other infectious diseases. In certain prefectures in

Xinjiang Province during 1986-1987, for example, there was an outbreak of non-A non-B hepatitis that spread over a wide area and had a high incidence rate such as is rare in the world.<sup>13</sup>

c. Infectious diseases that have been brought under control can always break out again. Examples include kala-azar, schistosomiasis, and venereal diseases. The incidence of leptospirosis was very low for a time, so some specialists devoted themselves to the prevention of other kinds of illness. In 1987, leptospirosis suddenly became highly epidemic with extremely adverse consequences for society. In addition, infectious diseases are naturally dormant, their dormancy period usually lasting for several months, or possibly several years or longer. Fairly longer periods of dormancy may be mistaken as being the results of control, and thus vigilance against dormant infectious diseases is slackened and both personnel and expenditures are ill-advisedly reduced. Once the dormancy period is over, with the approach of the peak period, people's lives and property are placed in very great jeopardy, causing epidemic prevention work to sink into a passive state. Therefore, one might say that the prevention of infectious diseases is a protracted war in which one cannot lightly declare that any infectious disease has been eradicated or brought under control.

d. There is also the possibility that new infectious diseases may constantly appear. AIDS, which has startled the world in recent years, has been transmitted into China, and its virus isolated. Numerous rural parts of the country are still unable to effect the process from syringe to injection to control. Once a disease is transmitted through the blood, the consequences are too terrible to imagine. In addition, non-A and non-B hepatitis, dengue fever, "paper workshop disease," Robinson's syndrome, and toxoplasmosis may all rise again to become major topics in future infectious disease prevention work.

e. Intestinal tract infectious diseases and natural focal diseases are becoming major kinds of infectious diseases impairing the health of China's people. Only improvement of environmental sanitation, drinking water sanitation, food sanitation, etc. will it be possible to keep them from becoming epidemic. Today China is in the first stage of socialism, with countless endeavors waiting to be undertaken. The country cannot suddenly allocate large amounts of financial resources for the construction of basic health facilities and environmental sanitation. Therefore, for a fairly long time to come, tremendous efforts will have to be made to prevent such infectious diseases.

### 6. Arranging a Proper Relationship Between Infectious Disease and Noninfectious Disease Prevention Work

The task that China faces in the prevention of infectious diseases is a rather daunting one. It requires both an intensification of monitoring and control of legally reportable infectious diseases, and control over those infectious diseases that have not yet been made legally

reportable but that threaten the people's health nevertheless, using monitoring as a springboard for control. Achieving this requires, first of all, ensuring that the country's sanitary and disease prevention work continues to focus on the prevention of infectious diseases, ensuring continuity in the epidemic prevention corps, steady improvement of personnel quality, gradual increase in expenditures for epidemic prevention, and the updating of techniques and equipment as development of the national economy permits.

Socioeconomic development varies from one part of China to another. This shows up, for example, in some large cities being able to control infectious diseases at a relatively consistent low level, and also enjoying abundant manpower and financial resources that not only can, but also should, be used to take the lead in research work aimed at controlling noninfectious diseases, and exploring experiences for the nation as a whole. In addition, other relatively backward places, if given outside assistance (from foreign countries or elsewhere in China) cannot be excluded from setting up pilot projects for the prevention and control of noninfectious diseases. However, a prerequisite for carrying out the aforementioned work is ensured continuity of the epidemic prevention corps, and the use of epidemic prevention funds for the purposes for which they were intended. Even if China becomes rich several decades hence, one cannot count on the state underwriting expenses for the prevention of noninfectious diseases the way it has done for infectious diseases. Instead, different groups will have to be looked to for different kinds of investment by individuals, collectives, and units for gradual development. Inattention to local circumstances, and diversion of manpower and financial resources to the development of research on noninfectious diseases, and a slackening in the main task of preventing infectious diseases must be guarded against at all costs. For the country as a whole, this means unhesitatingly reiterating that the focus of sanitary and disease prevention work should be the prevention of infectious diseases, and that there should be no shift in the emphasis of disease prevention work.

#### Footnotes

1. Ministry of Health. 1986 Health Statistics Summary, 1987.
2. Chinese Academy of Preventive Medical Science. Basic Health Data From 58 Illness Monitoring Points in China, 1986.

3. Compilation of National Epidemic Data for Each Year From 1950 Through 1986.
4. Sanitation and Epidemic Prevention Stations in the Guangxi Autonomous Region. 1986 Epidemic Situation Report. Internal Use Data.
5. Epidemic Diseases Office, Epidemic Diseases Research Institute. Excerpts from the September 1987 Report on Happenings Regarding National Reportable Infectious Diseases. JIBING JIANCE [DISEASE MONITORING], 1987; 2(11):163.
6. Epidemic Diseases Office, Epidemic Diseases Research Institute. Pertinent Requirements for Death Monitoring by Disease Monitoring Sites. JIBING JIANCE [DISEASE MONITORING], 1987; 2(12):182.
7. Yang Jilin [2799 4480 2651], et al. Survey of the Incidence of Disease Among a 520,000 Population in Certain Counties of Shandong Province. ZHONGGUO JIBING JIANCE [CHINESE DISEASE MONITORING], 1988; 3(2).
8. Qian Yuping [6929 1342 1627], Editor, LIUXING-BINGXUE [EPIDEMIOLOGY], p 273, People's Health, 1986.
9. Zeng Guang. Matching of Straight Lines and Curved Lines (Study Class Teaching Materials), 1986.
10. Sanitation and Epidemic Prevention Station, Dongcheng District, Beijing, Compilation of Materials. 1981-1985; 2:6:13.
11. Li Jincheng [2621 6855 1004] et al., Use of Epidemic Encephalitis A Polysaccharide Vaccine To Control a Large Epidemic of Epidemic Encephalitis, and Evaluation of Economic Benefits. ZHONGGUO JIBING JIANCE [CHINESE DISEASE MONITORING], 1988. 1988; 3(5).
12. BEIJING RIBAO, 3 January 1988, p 1.
13. Tong Zhifu. Survey Report of Xinjiang Non-A and Non-B Hepatitis, 1987.

**HONG KONG**

**Five Months Without New AIDS Case; Testing Continues**

54400006 Hong Kong *SOUTH CHINA MORNING POST* in English 28 Sep 88 p 3

[Text] Hongkong's anti-AIDS campaign appears to be paying dividends.

For the fifth consecutive month, not a single new victim has been struck down by the virus.

Last month more than 3,000 were tested for the anti-body but none of the tests were positive.

Since the Medical and Health Department's surveillance program was launched three years ago, more than 100,000 AIDS tests have been conducted.

Only 13 people have contracted the full-blown virus. Eleven of them have died.

**Army in Mountains Suffering Casualties From Malaria**

54004329 Manila *THE MANILA CHRONICLE* in English 27 Sep 88 p 7

[Article by Manny Mogato: "The One Foe the Army Can't Lick"]

[Excerpts] Siniloan, Laguna—Army troops operating in the rugged terrain of the Sierra Madre mountains have a more formidable enemy than the communist guerrillas here.

In fact, the Army battalion stationed here has already lost 46 of its men, most of them confined in hospitals in the coastal towns around Laguna de Bay.

The troops continue to suffer casualties, particularly during this time of the year, as it rains almost every day here, making it hard for the troops to maneuver and patrol in the wet and slippery mountain trails.

The Army seems helpless in containing its biggest single foe—malaria.

"This really affects our counterinsurgency operations considering that my battalion is undermanned," Lt. Col. Nagamora Lumodag told Army chief Maj. Gen. Mariano P. Adalem during a field inspection here. "We need more men to patrol and hunt down communist guerrillas operating in our area of responsibility. We can't do our job effectively with half of my men on sick bay."

Lumodag is the commander of the Army's 63rd Infantry Battalion operating in at least 10 towns in northeastern Laguna and in several remote villages in the towns of Real and Infanta in Quezon.

His area of operation constitutes only a small part of the Southern Tagalog region but moving his troops from one area to another requires long hours of travelling by hiking or by personnel carrier because of the rough terrain. His battalion headquarters on top of a hill in the Sierra Madre is about 12 kilometers or two hours' drive through a rough zigzag road to the nearest town.

The location of the camp deep in the forests of Laguna and Quezon and the continuous rain make his troops more susceptible to malaria, an Army doctor said.

"Malaria is a serious and chronic infectious disease," the doctor said. "It is one of the most prevalent infectious diseases in the tropics, where climatic conditions are favorable to the mosquito..."

The most common and widespread type of malaria is the "vivax" which is chronic and can withstand therapy. The serious and fatal type is the "falciparum."

Soldiers in the field say malaria is usually transmitted by the anopheline mosquito, which is prevalent in the damp and cold camp grounds in the jungles. But they add that extreme fatigue, starvation and other physical stresses make one susceptible to the disease.

Lumodag complains that medicines and other anti-malaria measures are inadequate. Refusal of some malaria stricken soldiers to take medicines worsens the problem.

Lumodag has been losing more men due to the disease than in encounters with the guerrillas of the New People's Army (NPA), who also roam the Sierra Madre mountain ranges. An average of five soldiers are infected with malaria every month.

Since they moved into the area last October, there have been only three to five encounters with the rebels with less than 10 soldiers wounded. Most of the fatalities on the government side were members of the local militia and police forces.

Adalem has promised to deliver anti-malaria medicines and equipment to disinfect the area. During his last visit, Adalem brought with him several boxes of "Cholofoz," an anti-malaria tablet. The boxes contained 70 bottles of 100 tablets each.

Before he left, Adalem advised Lumodag to have his troops take two tablets in front of him before giving them their monthly pay and allowances. The Army chief also advised his troops to sleep under mosquito nets and have their perimeter cleaned daily.

INDIA

**Minister of State Gives Statistics on AIDS**  
54500010 Bombay *THE TIMES OF INDIA* in English  
1 Sep 88 p 7

[Excerpt] New Delhi, 31 August (UNI & PTI)—Twenty-three cases of AIDS have so far been detected in India, of whom 16 were Indians and 7 foreigners.

The minister of state for health, Ms Saroj Khaparde, informed the Rajya Sabha today that of the 16 Indians, only 4 appear to have acquired the infection in India, indicating that the magnitude of clinically ill AIDS cases in India was quite low.

Ms Khaparde said India's first AIDS death occurred in Vellore on 14 May this year.

**Vaccine Developed for Dreaded Cattle Disease**  
54500011 New Delhi *PATRIOT* in English  
26 Aug 88 p 5

[Text] Bangalore, 25 August (UNI)—A vaccine to prevent theileriosis, a dreaded disease affecting dairy cattle, has been developed by Indian Immunologicals, a unit of the National Dairy Development Board.

This was disclosed at a workshop on animal health organised by Indian immunologists in cooperation with the Karnataka Cooperative Milk Producers Federation here today.

The disease, comparable to malaria in humans, was found among both exotic and cross-bred animals. There was no reliable treatment for the disease and the mortality rate due to the disease was 70 percent. The vaccine would be introduced in the market shortly.

## FEDERAL REPUBLIC OF GERMANY

**Forum Discusses 'AIDS at the Workplace'**  
54002401b Frankfurt/Main FRANKFURTER  
ALLGEMEINE in German 12 Sep 88 pp 9, 10

[Article by Gisela Friedrichsen: "AIDS at the Workplace: About One of Every 600 Employees Is Now Infected/Taking Action With a View to the Future-/Forum in Frankfurt"]

[Text] Frankfurt, 11 Sep—It has been a long time since it was 5 minutes before midnight; the hands of the clock are continuing to advance in the dark, faster and faster. The number of known AIDS cases in America is now 70,000 (40,000 of these have already died); in the FRG, there were supposedly 2,307 in August with a suspected additional 20 to 80 percent unknown cases. Thirty thousand German serum test results were positive. As a rough estimate, experience would indicate some 120,000 carriers of the virus, most of whom are now living and working among us with no knowledge of their condition. It will be argued that 2,307 is really an extremely small number of sick people! And who really believes rough estimates and suspected numbers of unknown cases... But the diseased who now lie in the clinics or cemeteries are the virus carriers of 1978 who were once hale and hearty. At that time, the word AIDS did not even exist at all and nothing was known of the existence of AIDS viruses. Will 120,000 AIDS patients lie in German clinics in 1998? For no one any longer believes that only a small percentage of the infected persons will get sick. All, probably almost all, is what they are saying. How many (millions) of infected persons will be going their way "hale and hearty?"

There is no reason to doubt that in 10 years the true extent of the HIV epidemic as it is in 1988 will be apparent to everyone. Today is the early phase of the epidemic and AIDS is no longer only a threat for homosexuals or drug addicts but the main means of spreading the disease is now heterosexual intercourse, the absolutely normal intimate relations between a man and a woman. Who in 1998 will still know with whom he flirted and spent a night in the summer of 1988? Who today can vouch for his late friend with whom he once spent a few days vacation at the end of the 1970's? People who are a little older may remember the smart saying that was going around after the student revolt: whoever sleeps with the same person twice belongs to the establishment. The average incubation time for the development of AIDS is now estimated at about 10 to 12 years but a heterosexual case is known in which the illness did not break out until 16 years after the infection. It is not yet known how long the constantly mutating viruses can actually behave relatively inconspicuously. A maximum incubation time is not in sight. Thus the disease can also break out in persons who, hardly remembering their "youthful sins," have long been deluding themselves into thinking that they are safe.

It is foolish, although understandable, to shut one's eyes to AIDS; and it is dangerous. The enemy, the disease, creeps up tremendously slowly and thereby remains under the alarm threshold of the individual. Thus, one must conclude, it is the task of the state and all those responsible to protect the citizen as well as possible. If AIDS no longer affects just "persons at risk" but everyone, then everyone must be warned. Anyone may have contact with infected persons at the workplace, in the neighborhood, or in his free time. The contact can be perilous or completely harmless. If a person knows about AIDS, he can avoid the danger. It is similar to the situation with a cardiac infarction, obesity, rheumatism or hypertension. An emergency can often be avoided merely through reasonable behavior and knowledge of the results of wrong actions.

One major reason why the German Foundation for the Promotion of Health has developed a project "Partners in the Struggle Against AIDS" is the uneasiness about the Federal Government's "laissez-faire" policy with respect to the subject of AIDS. At a forum with the theme "AIDS in the Workplace" in Frankfurt, there was sharp criticism, among other things, of the "very, very optimistic" figures published by the Federal Health Office, of the current legal situation and, as they said, of the government's inadequate administrative concept for the fight against AIDS. One needs alternatives, instructions for action, and "hard" information and one should want to support "preventive thinking." The active participation of personnel managers, company physicians and other employees sent to the forum by their companies made it clear that despite all official optimistic assertions about "changes in behavior through safer sex" the spread of the incurable disease of the immune system is not being underestimated by businesses. People are prepared to take action with a view to the future. But how?

It is still impossible to say how AIDS will make itself felt in plants and other workplaces. So far there have been only a few individual cases—the male nurse infected with HIV and suspended from his duties, for example, to whom the clinic had offered work in the central telephone office instead of with patients and who brought a successful action against this employment change. Or another case in which an infected florist brought an action before the labor court in Duesseldorf because his employer had dismissed him, having indicated an ongoing threat of injury and the associated danger of infecting other employees; the suit was rejected. But one must count on something else as well: with rumors when a coworker is frequently absent, and when one's colleagues seem to notice symptoms that could indicate AIDS, and with panic and knee-jerk reactions when the news of the illness of a coworker hits colleagues who are unprepared and inadequately informed. At the present time, it is presumed that one out of every 600-750 employees in the FRG is infected—his condition can disturb the peace in the workplace. But this must not and should not be. It is crucial that all employees be instructed thoroughly and repeatedly on the real dangers of AIDS by credible and

competent persons; the employees must know very well that their colleague at the workplace does not represent a danger and they should be able to feel certain that the regulations to prevent accidents are observed precisely and measures are taken in case of an accident: rubber gloves and mouth protection or breathing equipment for those giving first aid, for example.

Large enterprises such as Siemens or Lufthansa have already taken the precautions necessary for their area: employees who are sent to the tropics are offered a free HIV test. Most of them are making use of it, said Dr Klein, the personnel physician of Siemens AG, citing the case of a 36-year-old employee for whom the test was positive. Only the company physician, the personnel manager and the superior found out about it. Without creating a sensation, the man was sent to another area less dangerous to health. Because of the increased risk of infection in tropical regions, Lufthansa's "flying personnel" are required to take an AIDS test when they apply for work; employees who were already with the company when this practice was introduced, however, are spared the test "for reasons of the preservation of assets." It is hoped that a "flier" will voluntarily submit himself to a test in his own interests. A contractual obligation of the employee to be tested would not be legally binding anyway; the employee can have such a blood test made only voluntarily. If the employee refuses to allow his blood to be tested (when the issuance of a visa depends upon a negative finding, for example), then he must be employed elsewhere.

May an employer ask an applicant about AIDS? According to Prof Bernd Schuenemann from the University of Freiburg, a distinction should be made between the infection and the disease; if an applicant is infected by the AIDS virus, he is even allowed to make false statements about this to the employer; he may not, however, conceal the illness. Can an employer make the hiring of an applicant dependent upon a voluntary AIDS test? According to existing law, says Schuenemann, this is to be affirmed, because the applicant has no right to employment. The approval of the works committee is necessary, however. May a person infected with HIV be dismissed because of his infection? No, this is not permitted. If the disease has already fully broken out, however, one cannot expect the employer to continue the work relationship. The general legal principles for the termination of sick persons can then be applied, because there are frequent illnesses of short duration or long absences due to illness. "Only in the area of the public health service," said Schuenemann, "is an AIDS infection relevant; elsewhere it is nothing. Only the outbreak of the disease plays a role then."

There is a great fear of dealing with the subject of AIDS. There is the case of an administrative worker who refused to touch the records of an AIDS patient; when the man came into her office, she fled screaming loudly. There have been studies in the United States showing that almost half of the employees of a company would

refuse to work together with an AIDS victim, that 66 percent would hesitate to use the same toilet as a person with AIDS, that many would not take hold of the same tool, and that a large share of the employees do not believe that the virus can be transmitted only by means of bodily secretions.

The German Foundation for the Promotion of Health offers businesses an entire package of information possibilities: whether it is lectures of the physician Michael G. Koch who lives in Sweden (he is the AIDS adviser of the Bavarian Interior Ministry), information from the data bank of the population scientist Gerhard Heilig from the University of Bamberg, or the computer program of Prof Jose Gonzales from Norway, with which the epidemiology of AIDS can be presented convincingly and graphically. The foundation also offers the "know-how" for the training of a strategy team in companies, for no formula fits all companies. How does one react to a crisis? Whom does one inform and how when "Day X" arrives, the day in which the first case of AIDS becomes known in the workplace? Does one disseminate information through leaflets, posters and video films or does one hang announcements on the bulletin board? Should management send a letter to every employee? Should one introduce question-and-answer meetings? Invite an expert from outside? There are many such questions that will inevitably arise sooner or later. AIDS is no longer just a health, moral or political problem. It has also become an economic problem. Employers and employees will also have to deal with the perilous threat. It is high time.

#### Avarol Seen As Possible Future Cure for AIDS

Substance Impedes Propagation in Cells  
54002401a Frankfurt/Main FRANKFURTER  
ALLGEMEINE in German 17 Sep 88 p 9

[Article: "Another Step Toward a Better Understanding of the AIDS Virus: Avarol Impedes Propagation in Human Cells"]

[Text] Frankfurt, 16 Sep—It has been known for some time that the substance avarol extracted from the widespread sea sponge *Dysidea avara* impedes the propagation of the AIDS virus in human cells. Scientists from the University of Mainz and the Japanese National Cancer Research Center in Tokyo have now been able to clarify how the avarol in the cell interferes in the complicated processes in the production of the AIDS germ, the human immune deficiency virus (HIV). To be sure, these findings cannot yet be used directly for treatment but they do contribute to a better understanding of the structure and function of the hereditary information of the virus, which may result in additional ways to stem the virus.

Chemically avarol belongs to a large group of natural plant substances, the so-called sesquiterpenes. They have not yet been systematically investigated for possible

therapeutic effects. Avaral, a comparatively small but complex molecule, was isolated from the sea sponge by Werner Mueller from the Department of Applied Molecular Biology at the Institute for Physiological Chemistry of the University of Mainz. He then discovered that, among other things, the substance impedes the propagation of leukemia cells.

Since leukemias, which involve a multiplication of leucocytes, can also be caused by viruses closely related to the AIDS virus, it seemed reasonable to check avarol for possible qualities that impede HIV. It turned out that in the test tube the substance blocks the propagation of the virus even in concentrations that hardly affect the growth of human or animal leucocytes.

Further research on this phenomenon, in which scientists from the Medical Clinic of the University of Mainz and the American National Cancer Institute also participated, has now shown that avarol interferes in an important step in the transcription of the hereditary substance of the AIDS virus—and similar (cancer) viruses. This means that the hereditary substance cannot be utilized properly and that the propagation of the virus is, therefore, stopped. Avarol is obviously not so dangerous for normal uninfected cells. That is, the substance attacks a molecule, a so-called suppressor-transfer ribonucleic acid, that is only formed through a command of the virus. Healthy cells do not need and synthesize this substance and that is why the avarol is not able to damage them systematically. To be sure, avarol attacks other important cell structures, above all the cell skeleton that serves as a shell. This may well be the basis for its growth-impeding qualities with respect to the leukemia cells.

The fact that avarol has not yet been tested on patients has to do with peculiarities of its chemical structure. The substance is not readily soluble in water, so that it cannot be taken so easily. Meanwhile, druggists of the Merz pharmaceutical firm in Frankfurt, which acquired the patent rights from the researchers in Mainz, have been able to produce the substance in a form that makes it possible to inject it. After the first toxicological tests were encouraging, that is, there were no serious disturbances in experimental animals, this new compound is now being tested thoroughly in animals for its compatibility. The first use in humans could then take place in 14 to 18 months, provided that the tests that have now begun proceed favorably. If no threatening disturbances are perceived in the test persons, the drug may finally be tested in persons infected with AIDS.

#### Tests Expected in a Year

54002405a Duesseldorf *HANDELSBLATT* in German  
19 Sep 88 p 15

[Article: "Avarol: A Weapon Against the Deadly Disease?"]

[Text] An active ingredient that was discovered as long as 2 years ago could become a weapon against the deadly immunodeficiency disease AIDS. A team of German and

Japanese scientists is working with a substance called "Avarol," which is said to hinder the multiplication of the AIDS virus in infected cells in the body.

The task force headed up by Prof Werner Mueller at the University of Mainz has been studying how various substances work on leukemia cells for some time now. Avarol retarded the proliferation of these cells. For this reason, the Mainz researchers started tests with a special form of leukemia, which can occur in conjunction with the so-called T-cells. In this case, too, Avarol was effective. Since the AIDS virus (human immunodeficiency virus, HIV) prefers to penetrate such T-cells in order to multiply there, Mueller also tested this substance against HIV—with success.

Now, indeed, the effect was known, but the mechanism by which Avarol is able to stop HIV virus was still unknown. At this time, a research team headed by Yoshiyuki Kuchino at Japan's national cancer center discovered "suppressor transfer ribonucleic acid" (suppressor-t-RNA). Normally, t-RNA molecules play a part in the transfer of genetic information to protein molecules. Kuchino noticed that this suppressor-t-RNA occurred only in cells that were infected by HIV. Subsequently, the structural blueprint of this RNA, which is present in human cells, was isolated, and given to micro-organisms which produced the t-RNA in such quantities that experiments with it could be begun.

Kuchino and Mueller have been working together for a long time. The t-RNA was now being studied in Mainz. In the process, it was discovered that the t-RNA represents a kind of loophole by which the virus reproduces itself. Genetic information from HIV is thus built into the genetic plan of the cell that is under attack. When the virus multiplies, it must build a covering protein. The genetic information for this is mixed with the cell's original information. At a certain point, protein synthesis normally stops. The AIDS virus takes advantage of the suppressor-t-RNA's loophole.

Avarol plugs this loophole—the HIV can no longer multiply. So far, all of these experiments have been limited to the test tube; they have not yet been tried on AIDS patients. In order to conduct such trials, a solution of the effective agent that can be injected must be produced. The Frankfurt-based pharmaceutical firm Merz, a mid-sized, family-owned concern, has developed, according to its own statements, such a solution, subsequent to initial difficulties. This new preparation is first undergoing toxicological tests. According to Merz, it is expected that within 1 year, the drug will be used on humans for the first time.

In the meantime, the studies involving the AIDS virus are being conducted in a new laboratory at the University of Mainz. Professor Mueller and his team were able to move into the new facilities in February of this year,

after only one year of construction time. The State of Rhineland-Palatinate quickly contributed DM1 million after Mueller reported on his research.

## FRANCE

### Survey Finds Unrestricted Syringe Purchases Effective Against AIDS

54002404 Paris *LIBERATION* in French  
27 Sep 88 p 45

[Article by Francois Devinat: "Unrestricted Sale of Syringes Stems AIDS Tide;" first sentence is editorial introduction]

[Text] According to an evaluation report by the General Health Administration, the decision made by Michele Barzach and extended by Claude Evin seems to have succeeded in limiting transmission of AIDS.

Has the unrestricted sale of syringes in pharmacies changed the behavior of drug addicts? Has it, as was its goal, succeeded in limiting transmission of the AIDS virus? The measure, decreed for one year by Michele Barzach in February of 1987 and renewed by Claude Evin, seems to have gotten results. That is the view of an initial evaluation report that the General Health Administration has just forwarded to its minister. A growing minority of drug addicts are avoiding exchanging syringes by getting their supplies directly from pharmacies, according to the GHA report.

Psychiatrist Francois Rodolphe Ingold and his sociologist wife Sylvie Ingold spent 4 months investigating the situation in the streets, in hospitals, and in treatment centers to gather the data for this report. Exchanging syringes, they remind us, became common practice among heroin addicts in the seventies "as hygienic measures were minimal among the majority of them."

"It appears the situation began to shift beginning in 1983-1985, the period when rumors about the first AIDS cases circulated." But the picture really began to change when unrestricted sale of syringes went into effect. "This announcement contributed greatly to fostering awareness among drug addicts of the danger of the situation. Buying syringes in pharmacies has quickly become part of the culture, even though sharing has not stopped entirely."

Dr. Ingold and his wife based their work on 157 subjects encountered on the street and 123 contacted in treatment centers in Bordeaux, Marseille, Metz, Paris and its suburbs. It was an arbitrary sampling, but one judged "representative," with its share of delinquents, prostitutes, and socially-integrated users. The subjects were predominantly single (60 percent), male (67 percent), and "inactive" (50 percent). Half the heroin addicts met in the street (52 percent) claim to use only syringes they have purchased themselves. The rest, whether seropositive or not, "believe certain precautions are sufficient

(limited sharing) or that these do not apply to their case (sharing among seropositives)." Among drug addicts being treated in therapeutic settings, 60 percent still share their syringe. This behavior "seems much more frequent" among minors. According to the report, "many drug addicts do not know that the most effective and simplest method is to rinse the syringe twice with bleach, then with water."

Of the 120 cases questioned in the street, 76 percent had been tested for AIDS, "which strongly confirms the depth of their anxiety on the question." The seropositivity rate is 40 percent. "This seroprevalence [rate] is greater than Chicago's (30 percent) and less than New York's (50 percent). There is no way we could exaggerate just how alarming this finding is." The rate of seropositives climbs to 46 percent among drug addicts in institutions. However, once this rate is weighted with the rates for all the interviewed groups, taking into account those not tested, it falls to 35 percent.

Finally, what about used syringes? The Ministry of Health has done studies of the big city garbage dumps. Nowhere has an alarming increase in syringes found in the street been observed. In 28 percent of the syringes examined in the GHA report, the "pumps" have been destroyed. In 45 percent of the cases, they been thrown in garbage containers or sewers. In 25 percent of the cases, they have been abandoned "just anywhere." Sometimes (2 percent) they are saved or given away.

## IRELAND

### AIDS Rise Continues, Information Effort Scored

54500007 Dublin *IRISH INDEPENDENT* in English  
29 Aug 88 p 3

[Article by Steve Brennan]

[Text] As the number of full-blown AIDS victims in Ireland multiplies, the Government's information programme to combat the disease is failing, a Dublin crisis conference heard at the weekend.

By the end of next year the numbers of full AIDS cases will have risen from the present 61 to 250. In just over two years we will have at least 600 victims.

The startling figures were outlined by the chairman of AIDS Action Alliance, Mr Brian Murray, during the Irish AIDS Initiative Conference at All Hallows College, Drumcondra, which heard calls for urgent changes to meet the needs of people with the disease.

Despite the deaths so far in this country of 23 people there was still a total lack of understanding about the severity of the challenge to Ireland, the Co-ordinator of the Catholic Bishops' National AIDS Task Force, Fr Paul Lavelle, stressed.

"The problem is still in its infancy. The realisation of what is happening may take three to five years, when the coffins are coming out of the churches", he added.

The conference, attended by many AIDS sufferers, was jointly organised by AIDS Action Alliance in Dublin and AIDS Helpline of Belfast.

Some victims told the conference of struggling to pay for a specially recommended diet on their social welfare income.

Even those who did not suffer the full-blown disease but were diagnosed as HIV positive faced a range of social problems, said one speaker.

**Significant Rise in Measles Cases Reported**  
54500008 Dublin *IRISH INDEPENDENT* in English  
9 Sep 88 p 9

[Article by Tim Hastings]

[Text] The Department of Health is to begin a £3m. vaccination campaign next month in the face of significant rises in measles cases here. The uptake of free vaccine through GPs has dropped from 95 per cent of the target group in 1985 to just 60 per cent today and officials are worried that an epidemic could break out.

So far this year 346 cases of measles have been notified to the Department and officials expect the end of year total to exceed 600—three times last year's figure.

"When the level of uptake drops consistently it builds up a pool of infection in the community that at some stage could spark an epidemic," the Government's new Health Promotion Unit warned last night.

And it warned that Ireland was due to get a major measles outbreak this year on the basis of an accepted cycle.

The Department has decided to opt for a new three-in-one vaccine covering measles, mumps and rubella, known as MMR, which they say is safe and free from side effects. The 18-month campaign, which will run until March 1990, coincides with a similar programme in the UK.

The last major vaccination programme in 1985 brought a huge drop in the number of measles cases notified here—from 9,900 to 451 in a year.

Pregnant women picking up rubella disease run a major risk of developing a brain-damaged fetus. And children are the main carriers of the disease.

Mumps, on the other hand, causes deafness and male sterility. But although it is not currently a notifiable disease, it is believed this is under consideration.

Children who got the measles vaccine during the last campaign are to be encouraged to get the new three-in-one drug, which will be offered on the same free visit basis.

More than 250,000 are targeted for immunisation.

## NORWAY

**Armed Forces Reject Compulsory AIDS Testing for Recruits**

54002411 Oslo *AFTENPOSTEN* in Norwegian  
28 Sep 88 p 4

[Text] The Armed Forces Medical Service is placing the final touches on a new directive regarding infectious diseases for military personnel. Colonel Horgen Berner said to *AFTENPOSTEN* that the conclusion is clear: There will be no compulsory testing of soldiers for HIV.

So far, four conscripts have received positive test results for HIV. They were immediately dismissed from the service. The same thing happened with a soldier who had undergone voluntary testing while already serving. "We consider soldiers a low-risk group," said Berner. The reason for dismissal from the Armed Forces upon finding HIV is that it is assumed that work which is too physically strenuous is harmful regarding the course of disease.

One element in the new directive has won positive response from those with HIV positive [status]. "We recommend counseling to infected individuals and that they be transferred to service not requiring going out into the field," said Col Berner to *AFTENPOSTEN*. So far, 15,000 soldiers have had themselves voluntarily tested by the Armed Forces. Only one of these tested positive.

Intravenous drug users will be immediately dismissed because of a health profile in general, if it makes them unsuited for military service. Being a homosexual in itself will not constitute any justification for dismissal. The persons in question must prove that it would mean a great personal hardship on them in performing military service before they can be dismissed.

The United States is the only NATO country which conducts mandatory HIV testing of its military personnel.